



## PATENT APPLICATION

## IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re the Application of

Ali LAAYOUN et al.

Application No.: 10/590,973

Filed: August 28, 2006

Docket No.: 129219

For:

LABELING REAGENTS, METHODS FOR THE SYNTHESIS OF SUCH REAGENTS

AND METHODS FOR THE DETECTION OF BIOLOGICAL MOLECULES

## INFORMATION DISCLOSURE STATEMENT

Commissioner for Patents P.O. Box 1450 Alexandria, VA 22313-1450

Sir:

Pursuant to 37 CFR §1.56, the attention of the Patent and Trademark Office is hereby directed to the reference(s) listed on the attached PTO-1449. Unless otherwise indicated herein, one copy of each reference is attached. It is respectfully requested that the information be expressly considered during the prosecution of this application, and that the reference(s) be made of record therein and appear among the "References Cited" on any patent to issue therefrom.

- This Information Disclosure Statement is being filed (a) within three months of  $\boxtimes$ the U.S. filing date of this non-CPA application, OR (b) before the mailing date of a first Office Action on the merits in the present application. No certification or fee is required.
- Relevance of one or more non-English language reference is discussed in the  $\boxtimes$ 2. present specification. See References 17-49.
- $\boxtimes$ One or more references cited herein was cited in the International Search Report. An English language version of the International Search Report is attached for the Examiner's information. See References 33-34, 50 and 61-65.
- $\boxtimes$ In accordance with 37 CFR §1.98(a)(2)(ii), copies of any U.S. patents and patent application publications are not attached.

5. An English language Abstract of one or more non-English language reference is attached hereto. See References 21, 23-29, 31-40 and 45-49.

Respectfully submitted,

William P. Berridge Registration No. 30,024

David R. Kemeny Registration No. 57,241

WPB:DRK/amb

Date: December 21, 2006

OLIFF & BERRIDGE, PLC P.O. Box 19928 Alexandria, Virginia 22320 Telephone: (703) 836-6400 DEPOSIT ACCOUNT USE
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347 = 79.36 W	Sheet	1 of 6
Form PTO-1449  (REV. 1/06)  US Dept. of Commerce PATENT & TRADEMARK OFFICE  INFORMATION DISCUSSIVE STATEMENT	ATTY DOCKET NO. 129219	APPLICATION NO. 10/590,973
(Use several sheets if necessary)	APPLICANT(S) Ali LAAYOUN et al.	
	FILING DATE August 28, 2006	

	Υ		J.S. PATENT DOCUM	MENTS				
Examiner Initials	Cite No.	Document Number	Date	Name				
	1	US 5,449,767	09/12/1995	Ward et al.				
	2	US 5,328,824	07/12/1994	Ward et al.				
	3	US 4,507,466	03/26/1985	Tomalia et al.				
	9	US 4,568,737	02/04/1986	Tomalia et al.				
	5	US 6,083,708	07/04/2000	Singh et al.				
	9	US 4,683,195	07/28/1987	Mullis et al		, -		
	7	US 4,683,202	07/28/1987	Mullis				
	8	US 4,800,159	01/24/1989	Mullis et al.				
	9	US 5,399,491	03/21/1995	Kacian et al.				
	10	US 6,576,448 B2	06/10/2003	Weissman et al.				
	11	US 6,110,426	08/29/2000	Shalon et al.				
	12	US 6,083,763	07/04/2000	Balch				
	13	US 6,083,762	07/04/2000	Papen et al.				
	14	US 5,234,809	08/10/1993	Boom et al.				
	15	US 4,672,040	06/09/1987	Josephson				
	16	US 5,750,338	05/12/1998	Collins et al.				
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	17	EP 0.329.198 A2	08/23/19	89	Europe		
	18	EP 0.302.175 A2	02/08/19	89	Europe		
	19	EP 0.097.373 A2	01/04/19	84	Europe		
	2\$	EP 0.063.879 A2	11/03/19	82	Europe		
	24	EP 0.567.841 A2	11/00/19	93	Europe	х	
	22	EP 0.286.898 A2	10/19/19	88	Europe		
	23	EP 0.561.722 A1	09/22/19	93	Europe	x	
	24	EP 0.669.991 B1	09/06/19	95	Europe	х	
<u>.</u>	25	EP 0.827.552 B1	03/11/19	98	Europe	х	
	26	EP 0.350.407 B1	01/10/19	90	Europe	х	
	27	EP 0.569.272 B1	11/10/19	93	Europe	х	
	28	DE 3.910.151 A1	10/04/19	90	Germany	x	
	23	FR 2 607 507	06/03/19	88	France	x	
	30	WO 93/16094 A2	. 08/19/19	93	WIPO		
	31	WO 99/35500 A1	07/15/19	99	WIPO	x	
	32	WO 99/65926 A1	12/23/19	99	WIPO	х	
	33	WO 02/090319 A1	11/14/20	02	WIPO	x	
	34	WO 02/090584 A2	11/14/20	02	WIPO	х	
	35	WO 01/92361 A1	12/06/20	01	WIPO	x	
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Examiner Initials	Cite No.	Document Number	Da	ite	Country	With English Abstract	With English Translation
	36	WO 00/40590 A2	07/13/20	00	WIPO	х	
	37	WO 98/05766 A1	02/12/19	98	WIPO	х	
	38	WO 00/07982 A1	02/17/20	00	WIPO	х	
	39	WO 01/92361 A1	12/06/20	01	WIPO	х	
	46	WO 95/08000 A2	03/23/19	95	WIPO	х	
	41	WO 01/44506 A1	06/21/20	01	WIPO		
	42	WO 90/01069 A1	02/08/19	90	WIPO		
	39	WO 90/05338 A1	06/28/19	90	WIPO		
	46	WO 91/02818 A1	03/07/19	91	WIPO		
	46	WO 00/60049 A1	10/12/20	00	WIPO	x	
	46	WO 00/05338 A1	02/03/20	00	WIPO	х	
	49	WO 99/53304 A1	10/21/19	90	WIPO	х	
	46	WO 99/15621 A1	04/01/19	99	WIPO	х	
	49	WO 97/45202 A1	12/04/19	97	WIPO	х	
	50	WO 88/04289 A1	06/16/19	88	WIPO		
	1		OTHER D	OCUMEN	NTS		
Examiner Initials	Cite No.	(Including Aut	hor, Title, l	Date, Perti	nent Pages, etc.)		
	51	T.W. Greene et al., Protective Groups in pp. 230-245.	in Organic	Synthesis,	3 <sup>rd</sup> Edition, John Wiley and Sons, Inc.,	New York (199	1),
	52	S. Hunt, "The Non-Protein Amino Aci Hall, London (1985), pp. 55-138.	ds," Chemi	stry and B	iochemistry of the Amino Acids, edited	by G.C. Barett, (	Chapman and
EXAMINER	<u> </u>				DATE	CONSIDERED	····
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			OTHER D	OCUME	NTS				
Examiner Initials	Cite No.	(Including Aut	hor, Title, I	Date, Perti	nent Pages, etc.)				
	53	M. O'Donnell et al., "Reporter Groups for the Analysis of Nucleic Acid Structure," Bioorganic Chemistry: Nucleic Acids, Oxford University Press (1996), pp. 216-243.							
	54	J. Randolph et al., "Stability, Specificity and Fluorescence Brightness of Multiply-labeled Fluorescent DNA Probes," Nucleic Acids Research (1997), Vol. 25, No. 14, pp. 2923-2929.							
	55	T. Livache et al., "Preparation of a DN Oligonucleotides Bearing a Pyrrole Great							
	56	J. Cheng et al., "Preparation and Hybri Nature Biotechnology, Volume 16 (19			DNA/RNA from E. coli on Micro	ofabricated	1 Bioelectronic	Chips,"	
	57	T. Okamoto et al., "Microarray Fabrica Biotechnology, Vol. 18 (2000), pp. 433		Covalent A	Attachment of DNA Using Bubble	Jet Techi	nology," Natur	e 	
	58	G. Ramsay, "DNA Chips: State-of-the	Art," Natur	re Biotech	nology, Vol. 16 (1998), pp. 40-44	<del>1</del> .			
	59	J. Cheng et al., "Microchip-based Devi (1996), pp. 183-200.	ices for Mo	lecular Di	agnosis of Genetic Diseases," Mo	olecular D	iagnosis, Vol.	1, No. 3	
							<del></del>		
	60	T. Holton et al., "Advantageous Synthe Environments," J. Org. Chem. (1995),				with Lea	d Tetraacetate	in Basic	
	61	A. Laayoun et al., "Aryldiazomethanes Chem. (2003), Vol. 14, pp. 1298-1306		sal Labeli	ng of Nucleic Acids and Analysis	on DNA	Chips," Bioco	njugate	
			· -						
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		T	OTHER D	OCUME	NTS				
Examiner Initials	Cite No.	(Including Aut	hor, Title, l	Date, Perti	nent Pages, etc.)				
	62	M. Shiga et al., "Synthesis of a Novel (1993), Vol. 9, pp. 553-556.	Biotin Deri	vative Tha	at Bears a Diazo Group as the Re	active Site	," Analytical S	Sciences	
	63	M. Shiga et al., "Fluorescence Detection of DNA Using a Novel Peroxidase Substrate, 4-(4-Hydroxyphenylcarbamoyl)butanoic Acid," Analytical Sciences (1995), Vol. 11, pp. 591-595.							
	64		P. Langer et al., "Enzymatic Synthesis of Biotin-labeled Polynucleotides: Novel Nucleic Acid Affinity Probes," Proc. Natl. Acad. Sci. USA, Vol. 78, No. 11 (1981), pp. 6633-6637.						
								<u>.</u>	
	65	E. Bayer et al., "The Use of the Avidin 26 (1980), pp. 1-45.	-Biotin Co	mplex as a	a Tool in Molecular Biology," M	ethods of E	Biochemical A	nalysis, Vol.	
	66	G. Pratviel et al., "Carbon-Hydrogen B Int. Ed. Engl., Vol. 34 (1995), pp. 746		VA Sugar	Units as Targets for Chemical N	ucleases an	d Drugs," Ang	gew. Chem.	
	67	D. Sigman et al., "Chemical Nucleases	," Chem. R	lev., Vol. !	93 (1993), pp. 2295-2316.			,	
	68	"2 Methods for the Preparation of Alka	ane, Alkene	e, and Alk	yne Diazo Compounds," pp. 34-4	18.			
	69	B. Charleux et al., "Radical-initiated C Characterization," Makromol. Chem.,				n Copolym	erization and		
	70	M. Egholm et al., "Peptide Nucleic Ac Soc., Vol. 114 (1992), pp. 1895-1897.		Oligonucle	eotide Analogues with an Achira	l Peptide B	sackbone," J. A	Am. Chem.	
EXAMINER	L	<u> </u>				DATEC	ONSIDERED		
Examiner:		citation considered, whether or not citati				hrough cit	ation if not in	conformance	

Form PTO-144 (REV. 1/06)			ATTY DOCKET NO. 129219		APPLICATION NO. 10/590,973				
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							·		
OTHER DOCUMENTS									
Examiner Initials	Cite No.	(Including Author, Title, Date, Pertinent Pages, etc.)							
	71	W. Jencks et al., "Reactivity of Nucleophilic Reagents toward Esters," J. Amer. Chem Soc., Vol. 82 (1960), pp. 1778-1786.							
	72	G. Pratviel et al., "DNA and RNA Cleavage by Metal Complexes," Adv. Org. Chem., Vol. 45 (1998), pp. 251-312.							
	73	F. Ginot, "Oligonucletide Micro-Array Vol. 10 (1997), pp. 1-10.	s for Identi	fication o	f Unknown Mutations: How Far	from Reali	ty?," Human I	Mutation,	
					· <del></del>				
	74	X. Creary, "Tosylhydrazone Salt Pyrol	yses: Phen	yldiazom	ethanes," Organic Synthesis, Coll	., Vol. 7 (1	990), pp. 438-	443.	
	75	M. Oivanen et al., "Kinetics and Mech Bronsted Acids and Bases," Chem. Re				sphodieste	r Bonds of RN	A by	
	76	S. Agrawal, "Protocols for Oligonucleo Humana Press, New Jersey.	otides and A	Analogs, S	Synthesis and Properties," Method	s in Molec	cular Biology,	Vol. 20,	
	77	S. Wong, "Chemistry of Protein Conju	gation and	Cross-Lir	king," CRC Press (1991) pp. 16-	45.			
EXAMINER						DATE C	ONSIDERED		
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